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Mobile App Development – COMP.4630 – Fall 2021

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Term Paper – House Buddy

1. Initial Concept

a. Tachiyomi

It all begins with an app called Tachiyomi. Tachiyomi is a manga reading app that I use a lot. Manga is a style of Japanese comic books and graphic novels. Tachiyomi or its literal meaning “standing reading”, is an app that describes the practice of going to a bookshop and standing there reading the magazines or books. The app allows the user to read manga from anywhere at any time by installing extensions of existing manga websites with options to save, download, etc. Tachiyomi’s concept was fascinating which soon became my desired concept to follow. The app was created using Kotlin which made my hopes high in the completion of my future app.

2. Project Proposal Oct.13

a. Brainstorming

My partner, Taylor Yoeuth, and I came up with four proposal ideas. A cryptocurrency conversion app, a house hunting app, a house furnishing app, and a chef recipe logger app. These app were brainstormed with the concept of Tachiyomi in mind.

b. Cryptocurrency Conversion App

My partner as well as myself are cryptocurrency investors. We envisioned this app to help with on-the-go currency conversions. The app will give real time prices, via through API, on crypto with different currency conversions such as USD to EUR, EUR to YEN, etc. It will also

convert your shares of crypto to its currency value and vice versa. Another feature is a favorites tab to keep those coins that we have our eyes on. Also, we will implement user authentication using Google Firebase. We planned on either using Google sign-in or just your plain username and password. A reference app with a good user-friendly user interface that we planned on using is Robinhood. I use Robinhood myself and I can confirm that the user interface is modern, aesthetically pleasing, as well as efficient. These are the few features that we planned for. If time is on our side, then we may implement a few more features.

c. House Hunter App

I have been in search of a new home for quite some time, and I can say that house searching is difficult, especially with the prices of homes today. Our envision for this app was to have all real estate platforms in one area to reduce the time searching for a new home. Platforms such as Zillow, Redfin, Realtor, etc. The main feature of the app is to be able to search these platforms and save the houses that we liked onto a favorites list. The favorites list will display an image of the house along with real time prices changes via the platform's API. This will reduce the time by quite a bit by fixing the issue of opening too many tabs and websites for specific houses. Another feature is user authentication to save our favorites list with the possibility to send your list to your email. I believe that there is no app with a concept like this. Initially, this was the first app that came to mind, before brainstorming and even before the start of this class. I do plan on creating this whether we pick it as a project to pursue.

d. House Buddy App

This app was based off the previous app talked about above. Our envision for this app was to also have the many furniture retailers such as Ikea, Amazon, Target, etc. all in one place. This app would be targeting new homeowners. Allowing for retailers to be in one area will reduce the hours spent looking for the perfect item to complement our new home. Just like the house

hunting app, we would be able to save our item onto the favorites list. Here the item will be displayed along with its value. Again, there will be an implementation of user authentication to allow for the ability to send our favorites list to our emails. This may allow for in-person shopping and hopefully allow you, the consumer, to price match. A reference app with a good user interface is Tachiyomi as it has similar concepts.

e. Chef Logger App

I enjoy cooking so why not have an app that helps create recipes. Our envision for this app was to have a diary that allows for comments about what recipes that we attempted for the week. Those comments will tell the chef whether the ingredients combinations worked perfectly, doesn't work at all, or it didn't change anything. With this in thought, I was thinking of applying sentiment analysis to determine the class of the comments. A sentiment score will determine if we have a smiley face, a sad face, or a neutral face. Sentiment analysis will save some time allowing the chef to know exactly what they are looking for. We planned on achieving through IBM Watson, a machine learning tool that has predictive capabilities. Again, another feature would be user authentication which will give us the ability to have a safe copy of our research. It would be horrible if all the experimental recipes disappear. I may attempt this app on a later date as well.

f. Conclusion

My partner, Taylor Yoeuth, and I decided to go with House Buddy. We picked House Buddy because it piqued our interest and we believed it would be most achievable with our time constraint and knowledge. We plan to implement this app using Android Studio, but we needed a mock-up user interface before we started coding. Balsamiq is the tool that we used to create our rough idea of our envision. Once completed, we finally started coding for the first weekly project progress report.

3. Weekly Project Progress Report Nov.3

a. Goal

This is the first weekly project progress report. We had planned for a working user login interface using Google Firebase as the database to hold our user's information. The user login should use Google Sign-in to login, however if any issues occur, we will use the plain username and password login.

b. Outcome

Since the both of us are new to Android Studio as well as Google Firebase. We have looked up tutorials on how to create and connect our Google Firebase login interface. At first, we thought creating the login interface would be a piece of cake, having buttons and textboxes to do their respective tasks. However, there seems to be issues with Google Sign-in and its implementations. In the end, we decided to go with the latter, the plain username and password. I can confirm that it is much easier to implement not only simpler in code, but Android Studio has a built-in Google Firebase implementation. The code uses onclicklisteners( ) which applies a function to its respective button when pressed. Once pressed, we can change to different screens via views.

4. Weekly Project Progress Report Nov.10

a. Goal

This is the second weekly project progress report. We planned to create the navigation interface for the app. We decided to go with the sidebar navigation. Again, if any issues occur, we will swap over to a different style of navigation such as the bottom navigation.

b. Outcome

Since we are new to Android Studio, we have also looked for a tutorial for creating the navigation system. We found out that android studio already has a built-in sidebar navigation, so we decided to do this and make coding easier. From the default sidebar navigation, I implemented

the tabs that we desired, Home, Favorites, Browse, Profile, Settings. Here the first issue occurred, I felt as if the sidebar navigation did not have that “app” feel to it, but more of something like Gmail. I suggested that we try using a bottom navigation like most apps. The change was easy and now I am satisfied with the app’s current condition. It seemed like the app was right on track, however, using the default bottom navigation came with a lot of issues. The main issues are implementing our login interface code into Android Studio’s code. Since I am still new to Android Studio, trying to implement our code into prebuilt code that I have no knowledge of what they do became a huge mess. I would find myself with broken code. Code that will no longer compile. This begun the waves of frustration with Android Studio.

5. Weekly Project Progress Report Nov.17

a. Goal

This is the third weekly project progress report. For this week, we had planned on combining the two codes, bottom navigation, and login interface, together. Once completed, the next task we planned for was a support interface. This interface allowed the users to send messages to our House Buddy email by using their email used to login.

b. Outcome

I continued to try to implement the codes together. I attempted to search for online tutorials for such, however, it felt as the tutorials for Android Studio were extremely limited. This is the week where I back tracked and ended up recreating the login interface three times. I did this because we had an issue where I implemented the code, and everything just stopped working. I attempted to ctrl-z my way back, but the code was still not working. This would happen multiple times. At this point I was unmotivated to continue working on this app. That was when my partner, Taylor, told me about React Native. React Native is a JavaScript framework for writing real, natively rendering mobile apps for either iOS, Android, or both. React Native allows for cross-play. The app development in React Native seemed so self-explanatory and easy. It only

took me a couple days to recreate what I currently have in Android Studio. Not only that, but I was also able to join the two codes that I have been having trouble with for the past week or two. Of course, React Native is a new language that I am unfamiliar with, but it was easier to grasp than Android Studio with Java. Another tool that I used along with React Native is Expo. Expo is a framework and a platform for universal React applications. Basically, a set of tools that allows you to test your React Native code with real time updates. If I had known about React Native in the first place, I would have used it over Android Studio.

6. Weekly Project Progress Report Nov.24

a. Goal

This is the fourth weekly project progress report. This week we had planned on creating the main feature of our app. We decided to scratch the other tabs, favorites, browse, settings due to the time constraints. For the main feature, we decided to go with modal, flatlist, and card views. Also, we will be using touchable opacity, onpress, useState/useEffect, and much more.

b. Outcome

We were able to create a screen that displayed our list of rooms where you may find furniture in. By using a card view, which is more like a UI tool that allows for views to be shadows to promote a visually appealing text box. The flatlist will allow for possible animations that we may plan on doing in the future. It will list the cards where touchable opacity will make the cards be clickable. As of now, the clickable cards will not have any functionality. This is where onpress, useState/useEffect, and modal comes into play. The modal is like a popup view however to achieve this we will use onpress. The onpress will have two types of functionalities. One is to make the modal view visible, creating a smooth transition to an options screen. This option screen will allow the user to change the name of the rooms. Once changed the user will click save to confirm the change of name. Clicking save will cause useEffect to occur, in this

case, the modal view will become invisible. This makes the popup view disappear, another smooth transition.

7. Conclusion

To conclude, creating an app is hard work. It is extremely difficult and takes a great deal of knowledge and skills. As of right now, I am unsure if I will complete my envision of House Buddy from the proposal, but I will end with, hopefully, an app that compiles.

8. References Used in App

a. https://reactnative.dev/docs/touchableopacity

b. https://docs.expo.dev/get-started/installation/

c. https://reactnavigation.org/docs/tab-based-navigation/

d. https://reactnative.dev/docs/navigation

e. https://reactnavigation.org/docs/stack-navigator/

f. https://reactnative.dev/docs/modal

g. https://www.youtube.com/watch?v=iMCM1NceGJY

h. https://www.freelogodesign.org/

i. https://rnfirebase.io/

j. There is a lot more, but I was running out of time trying to find them with all the bookmarks.